

# Finance's role in the metaverse

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## Executive Summary



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*The metaverse is an online virtual reality with strong links to real-world time. These links give rise to risks both inside and outside the metaverse and, in turn, will drive demand for financial products to disperse the risks. Financial institutions will have to decide whether to do their metaversal risk-taking inside or outside the metaverse.*

### What is the metaverse?

The term “metaverse,” a portmanteau of “meta” and “universe,” was coined by science fiction author Neal Stephenson in his 1992 novel *Snow Crash*. In the book, the metaverse was described as a shared imaginary realm accessible to the public via VR goggles connected to a worldwide network.

“Metaverse” took on real-life meaning when the online game *Second Life*, which is played through avatars engaging in various activities within virtual spaces depicted with 3D computer graphics, was launched in 2003. A *Second Life* boom ensued, with many large corporations setting up in-game storefronts<sup>1)</sup>. Although the boom is long over, the metaverse is now back in the limelight in the wake of subsequent dramatic increases in computers’ 3D data processing capacity and VR goggle upgrades<sup>2)</sup>.

“Metaverse” is a broad term with varying definitions. For our purposes, we define it as (1) an online platform that (2) interfaces with the real world and (3) has physical laws that govern 3D virtual spaces.

Delving a bit deeper into our definition, the metaverse interfaces with the real world as a space where real people and real companies do things, often together with bots. Metaversal spaces reflect the structure of real-life society in certain respects and metaversal activities require real-world resources (most notably time in addition to electricity and computing power). The flow of time in the metaverse is more or less the same as in the real world.

Next, the metaverse is a world made up of and governed by algorithms that are analogous to physical laws. For example, metaversal spaces, though expandable,

#### NOTE

- 1) *Second Life* is currently still going strong with 64.7mn active users as of May 2021. See: <https://www.xrtoday.com/virtual-reality/second-life-user-traffic-jumps-35-percent-in-2021/>
- 2) The metaverse is estimated to be a \$1tn market opportunity per a January 2022 J.P. Morgan report entitled “Opportunities in the metaverse” (<https://www.jpmorgan.com/content/dam/jpm/treasury-services/documents/opportunities-in-the-metaverse.pdf>).

are finite at any given point in time and the speed at which avatars move around in them (including by flying through the air) is constrained by some physical law.

Lastly, metaversal activities can create certain forms of value that can be exchanged for value created by other metaversal activities. In this sense, the metaverse is distinguished by being a platform where value can be created and exchanged.

## Metaversal value creation

In today's Internet services industry, companies compete to capture a larger share of users' time or, in other words, their attention. YouTube has deployed algorithms that automatically queue up videos in accord with viewers' preferences and Facebook's newsfeed serves up a continual stream of content curated to users' interests. In the flat Internet world, however, hard-won attention slips away to rival sites with the click of a mouse. Pirated content is another headache.

The metaverse, by contrast, is a closed world without one-click offramps. Metaversal spaces require a certain amount of time to traverse. Behavior within the metaverse can be completely controlled algorithmically. Such behavior ranges from flying through the air to companies erecting storefronts emblazoned with their logos (an advertising-free version of the metaverse will presumably be available for an extra charge). On the other hand, the metaverse's behavioral repertoire does not include shoplifting of merchandise displayed in stores.

If the metaverse supplements, expands or takes the place of communication with others in the real world, content consumption and goods/services transactions, it could be an ideal venue for Internet companies to efficiently capture users' attention for longer<sup>3)</sup>.

3) Needless to add, there is strong opposition to a metaverse monopolized by tech giants like GAFA. The metaverse may be more decentralized than Web 2.0.

## Financial services needed in the metaverse

The key in terms of the relationship between the metaverse and finance is time. Past, present and future will exist in the metaverse as long as it is connected with the real world. In the metaverse, the past exists in the form of records, the present is computed algorithmically and the future is an unknowable world that

will be shaped by participants' actions and real-world events, both of which are unpredictable. In contrast to games that eventually come to an end once they reach their endgame stage, the future poses risk in the metaverse like in the real world. If risk exists, the metaverse would have to have some way to disperse it, meaning that metaversal finance would be needed.

First, as value increasingly changes hands in the metaverse, a stable payment system will be needed. NFTs seem to be fulfilling this role at present but they are hardly a stable or secure medium of exchange<sup>4)</sup>. A more secure payment system will likely be called for at some point.

4) See, e.g., <https://techcrunch.com/2022/03/29/axie-infinitys-ronin-network-suffers-%E2%89%88625m-exploit-in-largest-defi-hack-to-date/>

Loans secured by future added-value will also likely be needed to fund current consumption in the metaverse. And projects in the metaverse will likely be financed with equity investments also.

Money transmitters that intermediate transactions between the metaverse and real world will likely emerge. They would allow people without time to create value through metaversal activities to purchase value in the metaverse with real money. Conversely, some portion of the value created in the metaverse would naturally be converted into real money to be spent in the real world<sup>5)</sup>. Such financial services that would be required in the metaverse are not particularly cutting-edge. Perhaps the only new twist is that there is no assurance the services would be provided by incumbent financial institutions.

5) Some online game players have in fact purchased rare in-game items from other players in out-of-game transactions. Known as real money trades (RMTs), such transactions are prohibited by game operators. Many RMTs have reportedly involved the sale of a rare item by a player in a poor country to a buyer in an affluent country.

Meanwhile, financial products that address uncertainties pertaining to the metaverse itself—in other words, financial products that hedge risk outside of the metaverse—may also become available. If the metaverse is a world linked to real-world time, its demise would always be a risk. Insurers may offer insurance against this risk.

One possibility is insurance against closure of metaverse participants' accounts for some (illegitimate) reason. Such insurance would be analogous to life insurance. Another possibility is insurance against loss of data (e.g., loss of land purchased in the metaverse) due to circumstances within the metaverse or, in the worst case, destruction of the metaverse itself. Such insurance would be analogous to property and casualty insurance. I personally think the risks that financial institutions should get involved with are the bigger ones outside of the metaverse.

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